

**PROCEDURE 27 - Forklift**

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## Synopsis

The purpose of this procedure is to establish requirements relative to the hazards associated with the use of forklifts in the workplace. The procedure applies to all NWS facilities, work locations and employees where forklifts are used.

### **Initial Implementation Requirements:**

- C Analyze Site Operations versus Procedure Requirements**
  - Evaluate areas where Forklifts operate. (27.3.6)
  - Evaluate Fueling Operations. (27.3.2)
  - Evaluate Battery Charging and Changing Operations. (27.3.3)
- C Develop/Obtain Documentation/Information required for Site**
  - Obtain Label/Identification Marks for Approved Truck or Approved Industrial Trucks
  - Develop Forklift-specific hands-on Training Program. (27.3.5b)
  - Develop a License Card/Equivalent Documentation for Qualified Operators. (27.3.5c)
  - Develop Pre-Operational Safety Inspection Checklist. (27.3.4a)
  - Obtain written approval by manufacturer of all Forklift attachments. (27.3.1s), as required.
- C Designate Person to Administer Forklift Safety Procedure Requirements**
- C Provide Local Training of Site Personnel**
  - Training of Forklift Operators. (27.3.5)
- C Inventory Material/Equipment (Procure as required)**
  - Carbon Monoxide Monitors (If applicable) (27.4.2b, 27.3.6c.1)
  - Eyewash & Drenching Facilities. (27.4.2b, 27.3.3c)
  - Overhead Guards. (27.4.2b, 27.3.1l)
  - Load Backrest Extension. (27.4.2b, 27.3.1m)
  - Personal Protective Equipment (PPE). (27.4.2b, 27.3.1t & 27.3.3b)
  - Fire Protection Equipment. (27.4.2b, 27.3.3f.2)
  - Carbon Filter/Siphon (27.4.2b, 27.3.3h)

### **Recurring and Annual Task Requirements:**

- C Perform Inspection/Assessment/Testing**
  - Perform pre-operational safety inspections of forklifts. (27.3.4)

### **Review/Update Documentation/Information required for Site**

- Maintain Forklift-specific hands-on Training Program. (27.3.5a), as required
- Maintain License Cards/Equivalent Documentation for Qualified Operators. (27.3.5c)
- Maintain Pre-Operational Safety Inspection Checklist. (27.3.4a)
- C Provide Refresher Training of Site Personnel (If required)**
  - Training of Forklift Operators. (27.3.7)
- C Inspect/Replace/Recalibrate/Maintain Material/Equipment (As required)**
  - Carbon Monoxide monitors (If applicable) (27.4.2b, 27.3.6c.1)
  - Eye/Face/Body Flushing Drenching Facilities (27.4.2b, 27.3.3c)
  - Overhead Guards. (27.4.2b, 27.3.1l)
  - Load Backrest Extension. (27.4.2b, 27.3.1m)

- Wheel Chocks. (27.4.2b, 27.3.1i)
- Personal Protective Equipment (PPE). (27.4.2b, 27.3.1t & 27.3.3b)
- Fire Protection Equipment. (27.4.2b, 27.3.3f.2)
- Carbon Filter/Siphon (27.4.2b, 27.3.3h)



**Forklift Checklist**

<b>Requirements</b>	<b>EHB 15 Reference</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>Comments</b>
Is initial and annual review of this procedure conducted and documented?	27.4.2				
Are forklifts being used for their intended purposes in the appropriate environment according to this procedure?	27.3.1a				
Are only trained and qualified personnel permitted to operate forklifts?	27.3.5				
Has a forklift-specific hands-on training program been developed to qualify new operators and re-qualify existing Operators?	27.3.5a				
Has a License Card and/or Documentation Program for qualified operators been implemented and maintained?	27.3.5c				
Are Pre-operational Inspections of Forklifts being conducted at the beginning of each shift?	27.3.4 Attachments A & B				
Has Pre-operational Safety Inspection Checklist, applicable to the Forklifts been developed and being used?	27.3.4a				
Are all powered industrial trucks that require repair, defective or unsafe taken out of service until repair is done?	27.3.1o				
Are general requirements for operation, maintenance and use of forklifts being followed?	27.3.1				
Is there sufficient headroom under overhead installations, lights, etc., to avoid collisions during Forklift operations?	27.3.6a				

<b>Requirements</b>	<b>EHB 15 Reference</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>Comments</b>
Is there adequate lighting provided where Forklifts are being operated?	27.3.6b				
Is Carbon Monoxide monitoring/recording being conducted, if applicable?	27.3.6c				
Are requirements for the storage and handling of liquid fuel being followed?	27.3.2, Procedure 16				
Are guidelines for battery changing and charging being followed?	27.3.3				
Is refueling/battery charging being done in designated areas?	27.3.3a				
Is Personal Protective Equipment (PPE) being used during battery charging and installation activities?	27.3.3b				
Are there adequate flushing/rinsing facilities for eyes, face and body during Battery Charging Operations?	27.3.3c				
Are Fire Extinguishers readily available on site?	27.3.3f.2				

## **27 FORKLIFT**

### **27.1 Purpose and Scope**

As part of its goal to provide a safe and healthful workplace, the National Weather Service (NWS) is promulgating this procedure related to hazards associated with the use of forklifts in the workplace. This procedure applies to all NWS facilities, work locations and employees where forklifts are used.

### **27.2 Definitions**

Approved Truck or Approved Industrial Truck. A truck that is listed or approved for fire safety purposes for the intended use by a nationally recognized testing laboratory. Approved trucks shall have a label or other identifying mark indicating approval by a nationally recognized testing laboratory.

Field Office. A Field Office may include the following: Weather Forecast Office (WFO), River Forecast Center (RFC), Weather Service Office (WSO), and a Data Collection Office (DCO).

Forklift/Powered Industrial Truck. A mobile, power-driven vehicle used to carry, push, pull, lift, stack or tier material that is usually palletized. It may be known by several different names such as but not limited to high lift truck, counterbalanced truck, rider truck, side loader, pallet truck and tow motor. Excluded are earth moving and over-the-road haulage vehicles. For the purpose of this procedure Forklift, Powered Industrial Truck, Truck or Industrial Truck shall all mean the same thing.

Operating Unit. For the purpose of this procedure, Operating Unit includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), Radar Operations Center (ROC), or the Sterling Research & Development Center (SR&DC).

Station Manager. For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; and Tropical Prediction Center, NP8); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SR&DC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

### **27.3 Procedure**

**27.3.1 General Requirements.** The following general requirements apply to the operation, maintenance and use of forklifts at NWS facilities by NWS or contractor personnel.

- a. Individuals shall only use forklifts appropriate for the intended environment in which they will be operating. 29 CFR 1910.178, "Powered Industrial Trucks," provides guidance for the type of forklift to be used.

- b. Trucks shall not be driven up to anyone standing in front of a bench or other fixed object.
- c. No person shall be allowed to stand or pass under the elevated portion of any truck whether loaded or empty.
- d. Personnel other than the driver shall not be permitted to ride on forklifts.
- e. Employees shall not place their arms and/or legs between the uprights of the mast or outside the running lines of the truck.
- f. When a powered industrial truck is left unattended, the load shall be fully lowered, controls neutralized, power shut off and brakes set. The wheels shall be blocked if the truck is parked on an incline. (A powered industrial truck is unattended when the operator is 25 feet or more away from the vehicle which remains in view or whenever the operator leaves the vehicle and it is not in view.)
- g. When the operator of an industrial truck is dismounted and within 25 feet of the truck still in view, the load shall be fully lowered, controls neutralized and the brakes set to prevent movement.
- h. A safe distance shall be maintained from the edge of ramps or platforms while on an elevated dock, or platform or freight car. Trucks shall not be used for opening or closing freight doors.
- i. The brakes of highway trucks shall be set and wheel chocks placed under the rear wheels to prevent the movement of trucks, trailers or railroad cars while loading or unloading.
- j. Fixed jacks shall be necessary to support a semitrailer during loading or unloading when the trailer is not coupled to a tractor.
- k. The flooring of trucks, trailers and railroad cars shall be checked for breaks and weakness before they are driven onto.
- l. An overhead guard shall be used as protection against falling objects. It should be noted that an overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., representative of the job application, but not to withstand the impact of a falling capacity load.
- m. A load backrest extension shall be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.
- n. Whenever a truck is equipped with vertical only or vertical and horizontal controls that elevate with the lifting carriage or forks for lifting personnel, the following additional precautions shall be taken for the protection of personnel being elevated:



- (1) A safety platform firmly secured to the lifting carriage and/or forks shall be used.
  - (2) A means shall be provided whereby personnel on the platform can shut off power to the truck.
  - (3) Protection from falling objects shall be provided as indicated by the operating conditions.
  - (4) Fire aisles, access to stairways and fire equipment shall be kept clear.
- o. If at any time a powered industrial truck is found to be in need of repair, defective or in any way unsafe, it shall be taken out of service until restored to safe operating condition.
  - p. If the load being carried obstructs the drivers view the forklift will be driven in reverse.
  - q. Forklift drivers shall keep the load upgrade when traveling on grades in excess of 10 percent.
  - r. The rated capacity of the forklift shall never be exceeded.
  - s. Forklift attachments shall be approved in writing by the forklift manufacturer and forklift capacity plate shall be updated accordingly.
  - t. All NWS personnel operating a forklift shall wear a hard hat.

27.3.2 Fueling. The storage and handling of liquid fuels shall be done in accordance with the NWS Occupational Safety and Health Procedure 16, "Flammable and Combustible Liquid Storage."

- a. No forklift may be operated with a leak in the fuel system until the leak has been corrected.
- b. Spillage shall be avoided.
- c. Spillage of oil or fuel shall be contained or completely evaporated and the fuel tank cap replaced before restarting the engine.
- d. Open flames shall not be used for checking the electrolyte level in storage batteries or the gasoline level in fuel tanks.
- e. Forklifts shall not have their engine running during the fueling process.
- f. Forklifts using LP-Gas as a fuel shall only use DOT-approved containers having a minimum pressure of 240 psi or minimum Container Type 250, which has a 312.5 psi design pressure.

27.3.3 Batteries. Forklift batteries pose a hazard often overlooked by many operators. The following guidelines shall be followed regarding battery changing and charging:

- a. Battery charging installations shall be located in areas designated for that purpose.
- b. Appropriate personal protective equipment shall be used during battery charging and installation activities. This shall include, but not be limited to eye and face protection and acid resistant gloves and apron.
- c. Facilities for flushing/rinsing the eyes, face, body and the work area with water shall be provided wherever electrolyte is handled, except that this requirement does not apply when employees are only checking battery electrolyte levels or adding water to batteries with gel cells (When water supply is not available, e.g., at RDA sites, portable eyewash unit shall be provided). These facilities shall be available within 10 seconds of unobstructed travel-time distance from the charging station. These facilities shall be well marked and in locations free from obstructions. Care shall be taken when locating the units so as not to create a potential electrocution or shock hazard to personnel.
- d. Batteries shall be properly positioned and secured in the forklift.
- e. When charging batteries, acid shall be poured into water. If water is added to acid, a violent reaction will occur.
- f. The following facilities shall be provided during battery charging operations:
  - (1) Water hose or acid neutralizing material that can be poured onto a spill to flush and neutralize spilled electrolyte shall be provided.
  - (2) A fire extinguisher shall be readily available.
  - (3) Posts or substantial barricading shall be installed for the charging mechanism to protect the charging apparatus from damage by forklifts.
  - (4) Adequate ventilation for the dispersal of vapors from off-gassing batteries shall be provided.
- g. A conveyor, overhead hoist or equivalent material handling equipment shall be provided for handling batteries.
- h. A carbon filter or siphon shall be provided for handling electrolyte.
- i. Forklifts shall be properly positioned and brakes applied before attempting to change or charge batteries.

- j. Care shall be taken to assure that vent caps are functioning and the battery (or compartment) cover(s) shall be open to dissipate heat generated during the charging process.
- k. Smoking shall be prohibited in the charging area.
- l. Steps shall be taken to prevent open flames, sparks or electric arcs in battery-charging areas.
- m. Tools and other metallic objects shall be kept away from the top of uncovered batteries.

27.3.4 Pre-Operational Checks. The operator shall perform a pre-operational check on the forklift at the beginning of each shift.

- a. A pre-operational safety inspection checklist that is applicable to the forklifts and their use shall be developed and maintained. The information included on the checklist can be found in the operator's manual for the individual forklift.
- b. Two types of sample checklists can be found in Attachment A of this procedure.

<p><b>NOTE:</b> These formats may be used for the checklist; however, the items shall be tailored to the specific forklift. The inspection items can be found in the operator's manual(s).</p>
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27.3.5 Operator Training. Only trained and authorized personnel shall be permitted to operate a forklift.

- a. A forklift-specific, hands-on training program shall be implemented and maintained to qualify new operators and periodically re-qualify existing operators in the proper use of each forklift that they will operate.
- b. The training shall include both written and practical safe work activities that are representative of actual work-site conditions and associated forklift maneuvers.
- c. A license card and/or equivalent training documentation for qualified operators shall be implemented and maintained.

27.3.6 Work-Site Controls. The following requirements shall be followed in areas in which forklifts are operating.

- a. There shall be sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc., below which forklifts will be operating to prevent them from being struck by the forklift or the load being carried.

- b. General lighting of two lumens per square foot or more shall be provided where forklifts will be operating. If general lighting does not meet this requirement, auxiliary directional lighting shall be provided on the forklift.
- c. The levels of carbon monoxide gas created by forklift operations shall not exceed 50 ppm in any portion of the work area at any time. Monitoring of carbon monoxide (CO) can be performed by fixed or portable monitors. Representative sampling may be performed to ensure CO levels are not above the allowable level. However, if there is a change in the equipment used, such as a new forklift or a forklift that is putting out more CO than usual, monitoring shall be repeated to ensure the maximum level of 50 ppm is not being exceeded.

27.3.7 Refresher Training and Evaluation. Refresher training shall be conducted to ensure that the operator has the knowledge and skills needed to operate the powered industrial truck safely. Refresher training in relevant topics shall be provided to the operator when:

- a. The operator has been observed to operate the vehicle in an unsafe manner.
- b. The operator has been involved in an accident or near-miss accident.
- c. The operator has received an evaluation that reveals that the operator is not operating the truck safely.
- d. The operator is assigned to drive a different type truck.
- e. A condition in the workplace changes in a manner that could affect safe operation of the truck.
- f. An evaluation of each powered industrial truck operator's performance shall be conducted at least once every three years.

## 27.4 Quality Control

### 27.4.1 Regional or Operating Unit Environmental/Safety Coordinators

- a. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this procedure.
- b. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of this procedure every two years.

27.4.2 Station Manager

- a. Shall review or delegate review, of this procedure on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.
- b. Shall ensure that initial and periodic inventory of PPE, eyewash and face/body rinsing facilities, fire protection equipment and other safety equipment/instrumentation is accomplished and adequate stock is maintained.

27.4.3 NWS Headquarters (NWSH)

- a. The NWS Safety Office shall perform an annual assessment of the NWSH facilities to ensure that the facilities are in compliance with this procedure.
- b. The NWSH Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this procedure. The frequency of these regional and field office assessments shall be determined by the NWSH Safety Office.
- c. Requests for clarification concerning this procedure shall be directed to the NWSH Safety Office.

**27.5 Responsibilities**

27.5.1 Regional or Operating Unit Environmental/Safety Coordinators\*

Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters, and field offices or operating units.

27.5.2 Station Manager\*

- a. Shall have oversight over the implementation of this procedure, and ensure that the requirements of this procedure are followed by individuals at the NWS facility.
- b. Shall ensure that forklifts are only used in areas appropriate for their designation.
- c. Shall ensure that personnel operate forklifts in accordance with the requirements of this procedure.
- d. Shall ensure only trained and authorized personnel are allowed to operate a forklift.
- e. Shall ensure forklift operators receive adequate initial training and refresher training as needed.

27.5.3 Safety or Environmental/Safety Focal Point\*

Shall ensure that any responsibilities delegated to them by the Station Manager are implemented in accordance with the requirements of this procedure.

27.5.4 Employees

- a. Individual employees affected by this procedure are required to read, understand and comply with the requirements of this procedure.
- b. Report unsafe or unhealthful conditions and practices to their supervisor or safety focal point.

<p><b>NOTE:*</b> - Reference WSOM Chapter A-45 for complete list of responsibilities.</p>
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**27.6 References**

Incorporated References. The following list of references is incorporated as a whole or in part into this procedure. These references can provide additional explanation or guidance for the implementation of this procedure.

27.6.1 American National Standards Institute B56.1, "American National Standard for Powered Industrial Trucks", current version.

27.6.2 National Weather Service Occupational Safety and Health Procedure 16, "Flammable and Combustible Liquid Storage."

27.6.3 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910.178, "Powered Industrial Trucks."

**27.7 Attachments**

Attachment A: Sample Pre-Operational Checklist

Attachment A-1: Sample Pre-Operational Checklist

## ATTACHMENT A

## Sample Pre-operational Checklist

Date:	Forklift		Shift	Time		
	#	Items to Check	/		# / Items to Check	
Walk-around inspection	1	Oil, fuel or coolant leaks		Lower the hood and floor plate- and sit securely (cont.)	18	Brake pedal
	2	Tires and rims			19	Inching pedal
	3	Wheel nuts			20	Parking brake lever
	4	Tire pressure			21	Horn
	5	Lights			22	Lights
	6	Backrest extension		Turn the key to ON position	23	Amount of fuel
	7	Forks			24	Stop lights
	8	Tilt cylinder lock nuts			25	Backup lights and alarm
	9	Overhead guard			26	OK monitor
Raise the hood and seat assembly	10	Engine coolant level		Turn the key to START position	27	OK monitor
	11	Battery electrolyte level (Use eye protection)			28	Steering wheel
	12	Brake fluid level		Test operation	29	Lift chains
	13	Hydraulic oil level			30	Engine
	14	Engine oil level			31	Mast
Lower the hood and floor plate- and sit securely	15	Seat adjustment			32	Inching
	16	Seat Belt			33	Service brakes
	17	Accelerator pedal		34	Steering wheel	
Other deficiencies noted:						
Operator signature:						

Report all deficiencies to supervisor or maintenance immediately.





## ATTACHMENT A-1

## Sample Pre-operational Checklist

<b>SAFETY AND OPERATIONS CHECKS (Prior to Each Shift)</b>	<b>Shift 1,2,3</b>		
Fuel Odor Present (DO NOT START TRUCK - Report to your Supervisor Immediately)			
Fuel Level - Leaks			
Tires - Condition and Pressure			
Overhead Guard			
Load Backrest Extension			
Finger Guards			
Capacity Plate - Attached (Including Attachment Data)			
Safety Warnings - Attached (refer to Parts Manual for Location)			
Hour Meter Functioning			
Horn			
Lights			
Shift Linkage			
Accelerator Linkage			
Service Brake			
Parking Brake			
Steering Operation			
Hoist and Lowering Control			
Tilt Control - Forward and Back			
Attachment Control			
Mast Operation			
Main Hydraulic Tank Level			
Hydraulic Leaks - Valves, Hoses, Fittings, Cylinders, Etc..			
Forks, Top Clip Retaining Pin and Heel Condition			
Unusual Noise (Must be Investigated Immediately)			
Battery - Water Level			
Propane Tank, Rust, Corrosion, Damage			
Engine Oil Level - Leaks			
Engine Oil Pressure			
Engine Air Filter - Squeeze Rubber Dirt Trap or Check the Restriction Alarm/ Indicator			
Ammeter Operating			
Water or Anti-Freeze Level - Leaks			
All Belts			
Transmission Fluid Level			
Cab - Heater, Defroster, Wipers (If Equipped)			
Other Deficiencies Noted			

**Report all deficiencies to maintenance immediately:     / - Item OK   X - Item Deficient**

<u>1<sup>st</sup></u> Shift Operator Signature: _____	Date: _____
<u>2<sup>nd</sup></u> Shift Operator Signature: _____	Date: _____
<u>3<sup>rd</sup></u> Shift Operator Signature: _____	Date: _____